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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,902	11/08/2001	Michael J. Beaver	10790-006001	3092

26191 7590 11/02/2004

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EXAMINER
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WEIER, ANTHONY J

ART UNIT	PAPER NUMBER
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1761

DATE MAILED: 11/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/007,902	Applicant(s) BEAVER ET AL.	
	Examiner Anthony Weier	Art Unit 1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 July 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 1-9,37-39 and 41-44 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 10-36 and 40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group III in the reply filed on 7/26/04 is acknowledged.

### ***Claim Rejections - 35 USC § 112***

2. Claims 15, 31, 32, and 40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 15, "the remaining cracked soybean stream" lacks antecedent basis.

Claim 31 is confusing in that it is not clear what is desolventized and toasted: the first, second, or third soybean product.

In claim 40, "the stream" lacks antecedent basis.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 40 is rejected under 35 U.S.C. 102(b) as being anticipated by Japan 11-196803.

JP 11-196803 discloses producing a soy germ (or embryo) concentrate comprising separating the soy germ from a cracked soybean stream wherein the germ is removed

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from other soybean material (including meats) based on respective sizes (see abstract and use of , for example sieve in separating embryo from the rest of the soy bean material; see also paragraphs 7 and 8 of the Detailed Description in the attached mechanical translation).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of WO 96/10341 or WO 93/23069.

Each one of WO 96/10341 and WO 93/23069 disclose the preparation of a hypocotyl (or germ) fraction of high purity from soybean which has been crushed. In both references, the soybean is crushed to such extent that the hypocotyl is removed through a sieving machine having apertures of 1 to 2 mm diameter in the case of WO 96/10341 (see Example 1, page 5) and 1 mm x 1 mm apertures in WO 93/23069 (page 18). This means that most of the soybean, the remaining portion that is not hypocotyl (which, by the way, comprises a small part of the soybean as a whole) is of a size greater than the sieving apertures employed. Although it is not clear from these references whether or not the "soybean stream has a cracked size such that about 50%

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of the cracked particles are larger than 3.35 mm", it is not seen where same would provide for a patentable distinction given the high purity attained using the similar process steps of crushing and separating germ as set forth in each of WO 96/10341 and WO 93/23069. Absent a showing of unexpected results regarding this particular limitation concerning about 50% of the cracked particles being larger than 3.35 mm, it would have been obvious to one having ordinary skill in the art at the time of the invention to have attained such value as a matter of preference and to have arrived at such value through routine experimental optimization.

It should be further noted that WO 96/10341 discloses further purifying of the germ (hypocotyl) portion which would inherently involve remove of hull material (see page 5). Also, WO 93/23069 further discloses removal of hull material from the separated 87% hypocotyl portion (see page 18 and 19).

7. Claims 13-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over either one of WO 96/10341 or WO 93/23069 (as applied in paragraph 6) taken together with Applicants' own admission.

The claims further call for the treatment of cracked soybean having a moisture content of at least 8% or 9-11% and that the remaining portion of the cracked soybean after removal of the germ is further processed to prepare soybean oil and soybean meal. However, in processing of soybeans as admitted by Applicants, it is conventional to prepare other materials from soybeans including oil and soybean meal and to begin cracking treatment by drying the soybeans to a moisture content of 9-11% (see page 1). Absent a showing of unexpected results, it would have been obvious to one having

ordinary skill in the art at the time of the invention to have incorporated such moisture content as a conventional starting measure for cracking same and to have further processed other portions of the soybean to attain other conventional products such as soybean oil and soybean meal to, for example, greater exploit the value of soybean in general.

8. Claims 16, 17, 19/16, 20-24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' own admission taken together with Kim et al.

Applicants admit that it is known to provide a process wherein a stream of soybeans (having a moisture content of 9-11%) are cracked wherein the hull portion is removed and remaining soybean material is further treated to extract crude soybean oil and provide solvent laden white flakes wherein the solvent laden white flakes are further processed by solvent removal and/or toasting desolventizing (see page 1 of the instant specification).

The claims differ in that they call for the removal of the germ (or hypocotyl) to provide a soy germ concentrate from the cracked soybean and wherein said soy germ separation occurs prior to treatment to obtain the soybean oil and solvent laden white flakes. However, it is known to remove the germ (hypocotyl or embryo) prior to further processing as taught, for example, by Kim et al. More specifically, Kim et al teaches a process wherein cracked soybean is first divided into two portions: (1) one having primarily the hulls and embryo (or germ) and (2) whatever is remaining. The remaining portion is further processed (col. 2, line 65-col. 3, line 14). It should be further noted that Kim et al further teaches separating hull from the embryo portion of the soybean

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(col. 2, lines 16-18). It would have been obvious to one having ordinary skill in the art at the time of the invention to have incorporated the separation of the embryo as taught by Kim et al in the process of Applicants' own admission for the benefits attributed to the embryo portion of the soybean (see Kim et al, col. 1, lines 36-55).

The claims further call for the use of continuous processing. Although Applicants' own admission and the process of Kim et al are silent regarding a continuous processing mode, the continuous processing mode, like the batch or semi-batch models of processing, are notoriously well known in the prior art. It would have been obvious to one having ordinary skill in the art at the time of the invention to have employed a continuous mode of operation as an art recognized means for mass-producing product.

9. Claims 18, 19/18, 27, 29-32, and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' own admission taken together with Kim et al (as applied in paragraph 8) and further in view of Uesugi et al.

The claims also further call for further cracking the soybean material after removal of the soy germ portion. Uesugi et al teaches grinding soybean material, removing the hull and hypocotyl, and then crushing the remaining soybean material with stone rolls prior to further processing (see Example 1). It would have been obvious to one having ordinary skill in the art at the time of the invention to have employed such secondary crushing or cracking step to facilitate further processing of said soybean.

The claims further call for cooling and grinding the toasted soy meal (i.e. white flakes). However, such treatments would have been well within the purview of a skilled artisan. Clearly, it is notoriously well known to cool food material to a certain desired

level. Furthermore, it is notoriously well known to change the particle size of a food material depending on, for example, the texture desired, packaging considerations, etc. Therefore, it would have been obvious to one having ordinary skill in the art at the time of the invention to have employed such notoriously well known steps as a matter of preference depending, for example, on the temperature of the food desired and the particular form (powder, granule, etc.) desired.

10. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' own admission taken together with Kim et al (as applied in paragraph 8) and further in view of Strop.

The claims further call for further processing the crude soybean oil through refining. It is notoriously well known to refine crude soybean oil as taught, for example, by Strop (see Abstract). It would have been obvious to one having ordinary skill in the art at the time of the invention to have further refined the soybean oil as a matter of preference depending on the degree of purity desired.

11. Claims 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' own admission taken together with Kim et al and Uesugi et al (as applied in paragraph 9) and further in view of Strop.

The claims also call for further processing the crude soybean oil through refining. It is notoriously well known to refine crude soybean oil as taught, for example, by Strop (see Abstract). It would have been obvious to one having ordinary skill in the art at the

time of the invention to have further refined the soybean oil to as a matter of preference depending on the degree of purity of same desired.

12. Claims 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Applicants' own admission taken together with Kim et al and Uesugi et al (as applied in paragraph 9) and further in view of either one of WO 96/10341 or WO 93/23069.

The claims further call for cracking the soybeans to a cracked size such that about 50% of the cracked particles are larger than 3.35 mm. Each one of WO 96/10341 and WO 93/23069 disclose the preparation of a hypocotyl (or germ) fraction of high purity from soybean which has been crushed. In both references, the soybean is crushed to such extent that the hypocotyl is removed through a sieving machine having apertures of 1 to 2 mm diameter in the case of WO 96/10341 (see Example 1, page 5) and 1 mm x 1 mm apertures in WO 93/23069 (page 18). This means that most of the soybean, the remaining portion that is not hypocotyl (which, by the way, comprises a small part of the soybean as a whole) is of a size greater than the sieving apertures employed. Although it is not clear from these references whether or not the "soybean stream has a cracked size such that about 50% of the cracked particles are larger than 3.35 mm", it is not seen where same would provide for a patentable distinction given the high purity attained using the similar process steps of crushing and separating germ as set forth in each of WO 96/10341 and WO 93/23069. It would have been obvious to one having ordinary skill in the art at the time of the invention to have incorporated such steps of WO 96/10341 to WO 93/23069 to provide a more valuable product of higher purity. As for the particular steps to achieve same (about 50% of the cracked particles being larger

than 3.35 mm), absent a showing of unexpected results regarding this particular limitation, it would have been further obvious to have attained such value as a matter of preference and to have arrived at such value through routine experimental optimization.

***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

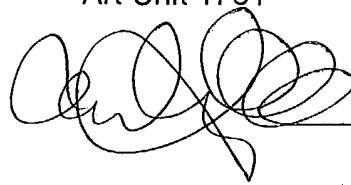
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Weier whose telephone number is 571-272-1409. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571-272-1398. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Anthony Weier  
Primary Examiner  
Art Unit 1761

Anthony Weier  
October 29, 2004

  
10/29/04